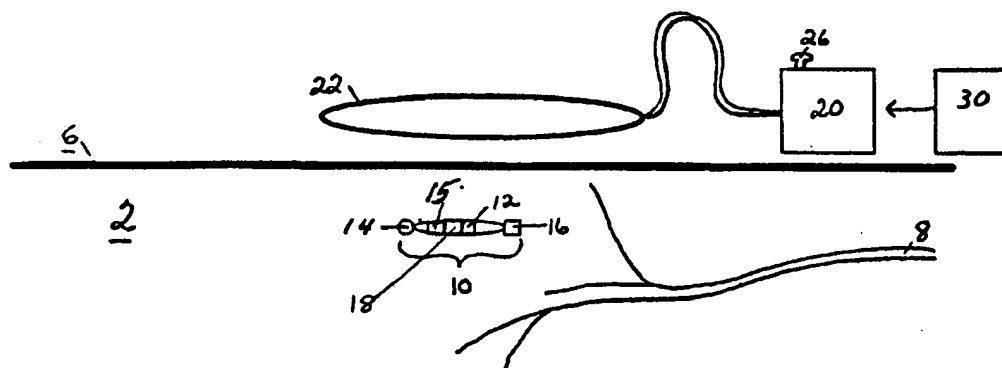




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁷ : A61N 1/36</p>	<p>A3</p>	<p>(11) International Publication Number: WO 00/01320</p>	
		<p>(43) International Publication Date: 13 January 2000 (13.01.00)</p>	
<p>(21) International Application Number: PCT/US99/14775</p>		<p>(81) Designated States: AU, CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p>	
<p>(22) International Filing Date: 29 June 1999 (29.06.99)</p>		<p>Published <i>With international search report.</i></p>	
<p>(30) Priority Data: 60/091,762 6 July 1998 (06.07.98) US</p>		<p>(88) Date of publication of the international search report: 22 June 2000 (22.06.00)</p>	
<p>(71) Applicant (for all designated States except US): ADVANCED BIONICS CORPORATION [US/US]; 12740 San Fernando Road, Sylmar, CA 91342 (US).</p>			
<p>(72) Inventors; and (75) Inventors/Applicants (for US only): LOEB, Gerald, E. [US/US]; 19348 Wing Foot Circle, Northridge, CA 91326 (US). MANN, Carla, M. [US/US]; 14175 Mulholland Drive, Beverly Hills, CA 90210 (US). RICHMOND, Francis, J., R. [CA/US]; 19348 Wing Foot Circle, Northridge, CA 91326 (US).</p>			
<p>(74) Agent: GOLD, Bryant, R.; Advanced Bionics Corporation, 12740 San Fernando Road, Sylmar, CA 91342 (US).</p>			

(54) Title: IMPLANTABLE STIMULATOR SYSTEM AND METHOD FOR TREATMENT OF URINARY INCONTINENCE



PROGRAMMING SYSTEM FOR IMPLANTABLE MICROSTIMULATOR

(57) Abstract

A method and system for treatment of urinary incontinence includes the injection or laparoscopic implantation of one or more battery- or radiofrequency-powered microstimulators (10) beneath the skin of the perineum. The devices are programmed using radio-frequency control via an external controller (20, 30) that can be used by a physician to produce patterns of output stimulation pulses judged to be efficacious by appropriate clinical testing to diminish incontinence symptoms. The stimulation program is retained in the microstimulator device (10) or external controller (20) and is transmitted when commanded to start and stop by a signal from the patient or caregiver. The system and method reduce the incidence of unintentional episodes of bladder emptying by stimulating nerve pathways (8) that diminish involuntary bladder contractions, improve closure of the bladder outlet, and/or improve the long-term health of the urinary system by increasing bladder capacity and emptying. Further, the system and method allow a patient to be taught to receive one or more patterns of neural stimulation that can be prescribed by a physician and administered without continuous oversight by a clinical practitioner.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LJ	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/14775

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :A61N 1/36

US CL :607/41

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 607/2, 36, 39-41, 116

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,405,367 A (SCHULMAN et al.) 11 April 1995, entire document.	1-12

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*G* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

27 MARCH 2000

Date of mailing of the international search report

18 APR 2000

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

KENNEDY SCHAETZLE

Telephone No. (703) 308-2211